

Porous Silicon Oxycarbide Integrated Circuit Insulator

Abstract of the Disclosure

5 An integrated circuit includes at least one porous silicon oxycarbide (SiOC) insulator, which provides good mechanical strength and a low dielectric constant (e.g., $\epsilon_R < 2$) for minimizing parasitic capacitance. The insulator provides IC isolation, such as between circuit elements, between interconnection lines, between circuit elements and interconnection lines, or as a passivation layer overlying both
10 circuit elements and interconnection lines. The low dielectric constant silicon oxycarbide isolation insulator of the present invention reduces the parasitic capacitance between circuit nodes. As a result, the silicon oxycarbide isolation insulator advantageously provides reduced noise and signal crosstalk between circuit nodes, reduced power consumption, faster circuit operation, and minimizes
15 the risk of potential timing faults.

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